***TOPIC:*** Wet and Dry Barrel Hydrants

***TIME FRAME:*** :30

***LEVEL OF INSTRUCTION:***

***BEHAVIORAL OBJECTIVE:***

*Condition:* A written quiz

*Behavior:* The student will list and describe the characteristics of wet and dry barrel hydrants.

*Standard:* Standard: With a minimum of 80% accuracy

***MATERIALS NEEDED:***

- Chalkboard and chalk
- Eraser
- Appropriate visual aids
- Audio visual equipment

***REFERENCES:***

- IFSTA, Essentials of Fire Fighting, 5th Edition, Chapter 12

***PREPARATION:*** There are two main categories of fire hydrants, wet and dry barrel. Knowledge of their advantages and limitations is crucial for effective fireground operations.

| PRESENTATION | APPLICATION |
|---|---|
| **I. THERE ARE TWO MAIN TYPES OF FIRE HYDRANTS, DRY BARREL AND WET BARREL.** | |
| A. Dry Barrel | |
| | Information Sheet #1 |
| 1. Is easily identified by a single stem nut on top of the bonnet which operates all outlets simultaneously. | |
| 2. Is predominately utilized in climates where freezing is expected. | |
| 3. Any water that may remain in the barrel of a closed dry barrel hydrant will drain through a small valve at the bottom. | |
| | How is the remaining water removed from the barrel? |
| a. The drain valve opens as the main valve closes | |
| b. The drain valve must be kept clean | |
| c. The water is drained to prevent freezing in the hydrant barrel which may damage the barrel | |
| d. To avoid hydrant contamination (from the water table) it may be necessary to plug drain holes and pump out hydrants after use | |
| 4. The main parts of a dry barrel are: | |
| a. Stem nut | |
| b. Operating stem | |
| c. Drain hole | |

| PRESENTATION | APPLICATION |
|---|---|

d. Valve (Located in ground below freeze line)

e. Hose outlet

f. Outlet cap with chain

5. Larger capacity hydrants may have multiple outlets with a single stem nut

6. Cap chains help prevent losses of caps but chains should be loose for turning

7. If the hydrant is knocked off the break away flange, the valve usually remains closed and no water is lost

B. The wet barrel is usually constructed having a compression valve at each outlet

1. Is easily identified by a single stem nut which is directly opposite the hose outlet it operates

2. There is a separate stem nut and valve for each hose outlet

a. Some wet barrel hydrants have a single valve on top of the bonnet to operate all outlets

3. Is predominately utilized in climates where freezing is not expected

4. Water always remains in the barrel of the hydrant ready for use

5. The main parts of a wet barrel are:

a. Stem nut

b. Operating stem

c. Valve

| PRESENTATION | APPLICATION |
|---|---|

d. Valve seat

e. Hose outlet

f. Outlet cap with chain

g. Automatic check valve (optional)

6. Large capacity hydrants may have multiple outlets with a stem nut and valve to operate each hose outlet

7. Caps chained help prevent caps from getting lost but chains should be loose for turning

8. If the wet barrel hydrant is knocked off the break away flange, the hydrant will lose water absent an automatic check valve

C. Hydrant Construction Features

1. Cast iron components

a. Bonnets

b. Barrels

c. Foot pieces

d. Caps

2. Bronze components

a. Working parts

b. Hose outlet threads

3. Facings are made of:

a. Rubber

b. Leather

c. Composition material

| PRESENTATION | APPLICATION |
|---|---|

D. Standard Fire Hydrant Outlets

1. One 4" or 4 1/2" outlet

2. Two 2 1/2" outlets

E. Hydrant Outlet Threads shall conform to the threads used by the local fire department

1. Will need to carry adapters if responding outside your district/area of responsibility

***SUMMARY:***

The dry barrel and wet barrel hydrants are the standard for fire flow systems in America. They are easily identified and every effort should be made to learn how each system operates.

***EVALUATION:***

A written quiz.

***ASSIGNMENT:***

To be determined by instructor(s).